

ABSTRACT

VALIDATION AND COMPARISON OF FLAME ATOMIC
ABSORPTION SPECTROPHOTOMETRY AND COMPLEXOMETRIC
TITRATION FOR DETERMINATION OF MINERALS (Zn AND Ca) IN
HEALTH SUPPLEMENTS

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The purpose of the present study was to validate and compare the Flame Atomic Absorption Spectrometry (FAAS) and complexometric titration for the determination of minerals, e.g. Zn (zinc), and Ca (calcium) contained in health supplements. Validation study showed that both methods fulfilled all the acceptance criteria of parameters, including selectivity, linearity, range, precision and accuracy. To compare the results of the assay for zinc and calcium, the recovery samples in three different level of concentration were analysed in three replicates by using both methods. The results showed that average recoveries were 99.70% \pm 0.25% and 99.17% \pm 0.60 for FAAS and titration method, respectively. The data were finally statistically analysed with TOST (Two One Sided Test), resulting that there was no significantly difference between FAAS and complexometric titration method for the assay either zinc or calcium in health supplements ($\alpha= 0.05$).

Keywords: Validation, FAAS, complexometry, Zinc, Calcium, health supplements